March 3, 2014

VIA FEDERAL EXPRESS

Ms. Katharine K. Buckner
Sandhills and Pulp & Paper Permitting Section
Engineering Services Division
Bureau of Air Quality
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: Resolute FP US Inc.
Part 70 Operating Permit TV-2440-0005
Permit Renewal Application
Response to February 10, 2014 Questions

Dear Ms. Buckner:

On behalf of Resolute FP US Inc., please find the attached response to questions that you requested by electronic mail on February 10, 2014.

If you have any questions, require further clarification, or need additional information regarding the application or this submittal, please do not hesitate to contact me.

Sincerely,

Steven R. Moore
URS Corporation

Attachment

cc: Mr. Dale Herendeen – Resolute FP US Inc.

URS Corporation
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Greenville, South Carolina 29607
Tel: 864.609.9111
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DHEC Title V Renewal Questions – February 10, 2014
Resolute FP 2440-0005

Resolute Response – March 3, 2014

DHEC Question/Comment:
Reviewing the calculation page for the Digester System (pg 7 of 174) and noticed the NCASI reference as TB 858. Many other pulp and paper sources have updated their emission factors for all sources by using the latest TB 973. Is this something you will do?

Resolute Response:
Resolute understands that NCASI will be publishing an update to TB 973 in the next several weeks or months. Resolute will review the update when published and make a decision about the emission factors at that time.

DHEC Question/Comment:
Section D of the TV renewal application:

1) A calculation sheet for ID 10 Methanol Tank could not be located within this section. Please provide the emission estimates for ID 10 Methanol Tank.

Resolute Response:
There was no calculation sheet provided for the methanol tank. The emissions submitted to the Department in March of 2004 are reproduced below:

EMISSION CALCULATIONS:

The following assumptions were made in using the AP-42 emission factor equations:

1. The maximum liquid height (Hlx) is equal to about 80% of the tank shell height;
2. The tank shell radius (Rs) is equal to half the tank diameter;
3. The tank cone roof slope (Sr) is equal to 0.0625 ft/ft, as recommended by AP-42;
4. The breather vent pressure setting range (dPb) is equal to 0.06 psi, as recommended by AP-42;
5. The daily vapor pressure range (dPv) is equal to 1 psi;
6. The daily ambient temperature range (dTa) is equal to 27 R, after a review of Table 7.1-6 in AP-42;
7. The daily total solar insolation factor (I) is equal to 2,000 Btu/ft^2/day, after a review of Table 7.1-6 in AP-42;
8. The tank paint solar absorptance (alpha) is equal to 0.17, as recommended by AP-42;
9. The daily average ambient temperature (Taa) is equal to 80^oF;
10. The liquid height (Hl) is equal to about 80% of the tank shell height;
11. The working loss product factor (Kp) is equal to 1, as recommended by AP-42;

As a result of these assumptions, the input values required for execution of the AP-42 emission factor equations reduce to the following:

D = 12 ft
H = 31 ft
Q = 740 bbl/yr
Mv = vapor molecular weight, lb/lbmol
= 32.04 lb/lbmol
Pva = vapor pressure, psia
= 2.61 psia (Table 7.1-3, AP-42, 5th ed.)

Using the equations given in Section 7 of AP-42 (5th ed.), the following emissions were estimated:

STANDING LOSSES ≈ 500 lb/yr
WORKING LOSSES ≈ 3000 lb/yr

DHEC Question/Comment:
Section D of the TV renewal application:

2) Several calculation sheets for some tanks were marked as "Insignificant Activities". However, the uncontrolled emissions are greater than 5 ton VOC/yr, and as such, these tanks are not insignificant and should be placed within the Emission Unit to which they belong. These sheets are identified as: Weak Black Liquor Tanks (pg 157 of 174); Strong black Liquor Tanks (pg 159 of 174); White Liquor Tanks (pg 161 of 174); High Density Pulp Tanks (pg 165 of 174); Low Density Pulp Tanks (pg 167 of 174). Also, Green Liquor Tanks (pg 163 of 174) was included with Emission Unit ID 07 Chemical Recovery. For the tanks mentioned above, please provide the Emission Unit ID to which it belongs, the number of tanks and capacity (in gallons) of each tank.

Resolute Response:
Many of the tanks listed as insignificant meet the threshold emission level as shown below. The non-insignificant high density pulp storage tanks should be another emission unit since they are between the pulping processes and the paper machines. The emission factors are in lb/hr/tank, and are independent of the size of each tank.

		VOC Emissions	
		lb/hr	tpy
Strong Black Liquor Storage Tanks			
M24-0090	No.2 Bl Liq. Storage (M51-0241)	0.45	1.96
M24-0128	Spare Liquor Tank	0.45	1.96
M25-0325	No.2 - 65% Blk Liq Storage Tank	0.45	1.96
M51-0012	No.3 - 65% Blk Liq Storage Tank	0.45	1.96
M52-0483	Spill Collection Tank	0.45	1.96
Weak Black Liquor/Soap Storage Tanks			

M15-0065	Weak Black Liquor Tank	0.36	1.58
M51-0243	No. 1 48% Black Liquor Storage Tank	0.36	1.58
M52-0140	Brown Stock Liquor Storage Tank	0.36	1.58
M52-0471	Intermediate Black Liquor Surge Tank	0.36	1.58
M15-0139	Weak Black Liquor Tank Floating Soap Skimmer	0.36	1.58
M24-0085	Soap CollectionTank	0.36	1.58
M24-0026	Soap Storage Tank	0.36	1.58
M24-0028	Concentrated Soap Tank	0.36	1.58
Green Liquor Storage Tanks			
M27-0007	Green Liquor Blend Tank	3.93	17.19
M27-0010	Clarified Green Liquor Storage Tank	3.93	17.19
White Liquor Storage Tanks (Nos. 2-5 out of service)			
M27-0569	No. 1 White Liquor Storage Tank	0.91	3.99
M27-0650	No. 6 White Liquor Storage Tank	0.91	3.99
High Density Pulp Storage Tanks			
M17-0044	No. 1 Bleached HD Tower	1.65	7.24
M17-0097	No. 2 Bleached HD Tower	1.65	7.24
M17-0102	No. 3 Bleached HD Tower (Pulp Dryer WW Chest)	1.65	7.24
M17-0123	No. 4 Bleached HD Tower	1.65	7.24
M17-0455	No. 8 Bleached HD Tower	1.65	7.24
M17-0520	No. 9 Bleached HD Chest (Was M16-0135)	1.65	7.24
M40-0001	No. 6 Kraft HD Chest	1.65	7.24
M40-0005	No. 7 Kraft HD Chest	1.65	7.24
M40-0306	Outside Coated Broke Chest (Old No. 5 Bleached HD)	1.65	7.24
M44-0180	High Density Storage Chest	1.65	7.24
M60-0076	High Density Chest	1.65	7.24
M61-0228	No. 3 Mill Medium Density Chest	1.65	7.24
Low Density Pulp Storage Tanks			
M17-0179	Bleached TMP Stock Chest	0.99	4.33
M19-0052	TMP Stock Chest	0.99	4.33
M19-0053	Pine Kraft Chest	0.99	4.33
M19-0054	Hardwood Kraft Chest	0.99	4.33
M19-0055	Uncoated Broke Chest	0.99	4.33
M33-0008	Coated Broke Chest	0.99	4.33
M40-0019	Refined Kraft Blend Chest	0.99	4.33
M40-0023	TMP Stock Chest	0.99	4.33
M40-0029	Outside Uncoated Broke Chest	0.99	4.33
M40-0063	Broke Blend Chest	0.99	4.33
M44-0184	No. 2 Mill Low Density Blend Chest	0.99	4.33
M45-0003	Kraft Low Density Chest No. 1 (East)	0.99	4.33
M45-0006	TMP Low Density Chest	0.99	4.33
M45-0010	Kraft Low Density Chest No. 2 (West)	0.99	4.33
M45-0013	Uncoated Broke Chest	0.99	4.33
M45-0016	Coated Broke Chest	0.99	4.33
M60-0080	No. 1 Mill Low Density Blend Chest	0.99	4.33
M61-0232	No. 3 Mill Low Density Chest	0.99	4.33

DHEC Question/Comment:
Digester Relief Gas emission calculation page (pg 9 of 174) –

1) Upon reviewing this emission calc page and the referenced NCASI TB, not all of the pollutants presented in Table 9A of NCASI TB 858 are present on the emission calculation page, such as dimethyl disulfide, methyl mercaptan, etc. Please include all pollutants that are presented in the NCASI tables in the calculation sheets. If you believe that a pollutant in the NCASI TB is not emitted from your source then provide a detailed justification why that pollutant is not emitted from the source.

Resolute Response:
Resolute has included all emission factors from the NCASI tables, even those for non-regulated compounds as requested by the Department.

DHEC Question/Comment:
Digester Relief Gas emission calculation page (pg 9 of 174) –

2) VOC as VOC – a conversion is used to go from VOC as C to VOC as VOC. BAQ prefers that the conversion based on molecular weight not be used because it is not a good approximation of Total VOCs. There is no easy conversion from VOC as C to VOC as VOC. It would be better to sum all pollutants presented in the TB for each source that are VOCs. Please do this for all sources at the facility where the NCASI TBs are used.

Resolute Response:
Resolute followed EPA Region 4 guidance for converting VOC as C to VOC as VOC using the molecular weight. This approach was previously accepted by the Department. Although Resolute does not agree that is better to sum all the pollutants to estimate the total VOC, at the request of the Department a third line has been added to sum all the individual VOC's.

DHEC Question/Comment:
Digester Blow Tank (pg 11 of 174) –

3) Pollutants that are noted as being "non-detect" in the NCASI TB have been included in the calc sheet. "Non-detects" are considered "0" and should not be accounted for in the calc sheet. I believe this is EPA's current approach.

Resolute Response:
Resolute has removed the "non-detect" emission factors as requested by the Department.

DHEC Question/Comment:
4) Primary Knotters – at the inspection last year, Paul Edinger of the Lancaster District office noted there are 2 each of the primary knotters and secondary knotters. The PFD in Tab 3 of the application shows a "(2)" in the box for each of these. Is it correct that there are two each of these? If so, I will denote this in the equipment listing in the TV permit.

Resolute Response:
There are two primary knotters and two secondary knotters and indicated on the drawing and in the inspection report.

DHEC Question/Comment:
The equipment listing for the TMP process lists "Liquid Phase Separators (1,5204 gallons each)". The gallon size does not make sense. How many separators are there and what are the sizes?

Resolute Response:
There are three liquid phase separators. The capacity is a typo, it should read 1,520 gallons.

DHEC Question/Comment:
Page 11 of 15 of Form C lists the control device ID for the No. 2 Lime Kiln as 2723S2. But the control device table in Form C lists the Lime Kiln ESP ID as 2723C. Which is correct?

Resolute Response:
This is a typographical error. The Lime Kiln ESP ID is 2723C.

DHEC Question/Comment:
Form C – pg 12 of 15 lists the control device ID for the Power Boiler as 2550C. However, this Control Device ID does not appear in the Control Device Table in Form C. Is 2550C a typo or was 2550C left off out of the control device table? Please correct.

Resolute Response:
This is a typographical error. The Power Boiler operates without any air pollution control device.

DHEC Question/Comment:
Please provide more information on the Methanol Tank. 45,686 gallons is greater than the 151 m3 specified in the regulation. What is the true vapor pressure of MeOH? Sources greater than 151 m3 with a true vapor pressure ranging from 5.2 kPa to 76.6 kPa (which I believe MeOH is within this range) should be equipped with one of the following: 1) fixed roof with internal floating roof; 2) external floating roof; 3) closed vent system and control device; or 4) an equivalent system to 1), 2), or 3). Which of these is the MeOH tank equipped with?

Resolute Response:
The tank capacity in Form C is incorrect, the actual capacity is 39,023 gallons as shown below in the Subpart Kb applicability spreadsheet originally submitted to the Department on August 6, 2007.

BOWATER - CATAWBA - TITLE V RENEWAL
POTENTIAL FOR SUBPART Kb APPLICABILITY

TANK ID	CAPACITY (GAL)	CONTENTS	MAX. VAPOR PRESSURE* (kPa)	CAPACITY			VAPOR PRESSURE				CONCLUSION
				< 19,800 GAL	19,800 GAL TO 39,900 GAL	> 39,900 GAL	< 15.0 kPa	< 27.6 kPa	27.6 to 76.6 kPa	> 76.6 kPa	
M10-276	25,000	Fuel Oil	< 1		X		X				Not subject to Kb
M10-328	20,000	Kerosene	< 1		X		X				Not subject to Kb
M10-329	20,000										
M10-330	20,000										
M28-223	39,023	Methanol	18**		X			X			Subject to 60.116b(a)-(d) [recordkeeping] only***
M44-440	16,000	Turpentine	N/A	X							Not subject to Kb
M44-488	15,360										

Notes:
* maximum monthly average temperature = 80.3 deg. F at Charlotte, NC (30-yr. normal from National Climatic Data Center)
** vapor pressure at 80 deg. F = 2.61 psia = 18 kPa (AP-42 Table 7.1-3)
*** 60.112b(a)-(b) [controls] do not apply to tanks less than 39,900 gallons with vapor pressures less than 27.6 kPa.